В		N	G	0	В		N	G	0
44 Ru Ruthenium	96 Cm Curium	22 Ti Titanium	103 Lr Lawrencium	83 Bi Bismuth	12 Mg Magnesium	59 Pr Praseodymium	30 Zn Zinc	101 Md Mendelevium	49 In Indium
90 Th Thorium	75 Re Rhenium	70 Yb Ytterbium	33 AS Arsenic	88 Ra Radium	34 Se Selenium	42 MO Molibdenum	21 SC Scandium	107 Bh Bohrium	3 Li Lithium
93 Np Neptunium	12 Mg Magnesium		54 Xe Xenon	43 TC Technetium	29 Cu Copper	Rg Roentgenium		35 Br Bromine	109 Mt Meitnerium
18 Ar Argon	23 V Vanadium	101 Md Mendelevium	1 H Hydrogen	69 Tm Thulium	66 Dy Dysprosium	98 Cf Californium	96 Cm Curium	113 Nh Nihonium	65 Tb Terbium
107 Bh Bohrium	4 Be Beryllium	89 AC Actinium	56 Ba Barium	71 Lu Lutetium	27 Co Cobalt	22 Ti Titanium	95 Am Americium	51 Sb Antimony	NO Nobelium

Bernard Taylor Physics & Chemistry **1** of **25**

В		N	G	0	В		N	G	0
29	105	13	80	87	79	2	40 Zr Zirconium	47	87
Cu	Db	Al	Hg	Fr	Au	He		Ag	Fr
Copper	Dubnium	Aluminum	Mercury	Francium	Gold	Helium		Silver	Francium
75 Re Rhenium	38 Sr Strontium	30 Zn Zinc	3 Li Lithium	49 In Indium	6 C Carbon	96 Cm Curium	Sn Tin	3 Li Lithium	8 O Oxygen
35 Br Bromine	92 U Uranium		Ru Ruthenium	Mg Magnesium	116 LV Livermorium	113 Nh Nihonium		31 Ga Gallium	58 Ce Cerium
45	108	5	70	20	38	29	43 TC Technetium	56	98
Rh	HS	B	Yb	Ca	Sr	Cu		Ba	Cf
Rhodium	Hassium	Boron	Ytterbium	Calcium	Strontium	Copper		Barium	Californium
14	118	28	17	93	41	53	70	13	93
Si	Og	Ni	Cl	Np	Nb	I	Yb	Al	Np
Silicon	Oganesson	Nickel	Chlorine	Neptunium	Niobium	Iodine	Ytterbium	Aluminum	Neptunium

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В		N	G	0	В		N	G	0
31 Ga Gallium	110 DS Darmstadtium	85 At Astatine	66 Dy Dysprosium	34 Se Selenium	99 Es Einsteinium	57 La Lanthanum	83 Bi Bismuth	59 Pr Praseodymium	107 Bh Bohrium
83 Bi Bismuth	63 Eu Europium	105 Db Dubnium	33 As Arsenic	36 Kr Krypton	63 Eu Europium	19 K Potassium	88 Ra Radium	87 Fr Francium	105 Db Dubnium
112 Cn Copernicium	20 Ca Calcium		73 Ta Tantalum	113 Nh Nihonium	22 Ti Titanium	91 Pa Protactinium		37 Rb Rubidium	60 Nd Neodymium
78 Pt Platinum	SC Scandium	118 Og Oganesson	17 Cl Chlorine	2 He Helium	Rg Roentgenium	92 U Uranium	NO Nobelium	68 Er Erbium	1 H Hydrogen
87 Fr Francium	55 CS Cesium	90 Th Thorium	32 Ge Germanium	116 LV Livermorium	18 Ar Argon	43 TC Technetium	6 C Carbon	48 Cd Cadmium	114 F Flerovium

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В		N	G	0	В		N	G	0
114 F L Flerovium	63 Eu Europium	71 Lu Lutetium	88 Ra Radium	48 Cd Cadmium	47 Ag Silver	64 Gd Gadolinium	89 AC Actinium	110 DS Darmstadtium	42 MO Molibdenum
73 Ta Tantalum	96 Cm Curium	37 Rb Rubidium	No Nobelium	1 H Hydrogen	108 HS Hassium	27 Co Cobalt	34 Se Selenium	118 Og Oganesson	96 Cm Curium
8 O Oxygen	98 Cf Californium		3 Li Lithium	100 Fm Fermium	TS Tennessine	101 Md Mendelevium		6 C Carbon	90 Th Thorium
116 LV Livermorium	80 Hg Mercury	103 L r Lawrencium	65 Tb Terbium	4 Be Beryllium	100 Fm Fermium	3 Li Lithium	Sn Tin	44 Ru Ruthenium	88 Ra Radium
15 P Phosphorus	41 Nb Niobium	18 Ar Argon	99 ES Einsteinium	44 Ru Ruthenium	62 Sm Samarium	14 Si Silicon	83 Bi Bismuth	Fe Iron	94 Pu Plutonium

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В		N	G	0	В	I	N	G	0
99 Es Einsteinium	76 Os Osmium	107 Bh Bohrium	28 Ni Nickel	75 Re Rhenium	76 Os Osmium	69 Tm Thulium	Rg Roentgenium	15 P Phosphorus	5 B Boron
Pb Lead	51 Sb Antimony	74 W Tungsten	63 Eu Europium	27 Co Cobalt	57 La Lanthanum	68 Er Erbium	115 MC Moscovium	99 ES Einsteinium	74 W Tungsten
109 Mt Meitnerium	92 U Uranium		10 Ne Neon	TS Tennessine	107 Bh Bohrium	10 Ne Neon		28 Ni Nickel	92 U Uranium
8 O Oxygen	30 Zn Zinc	110 DS Darmstadtium	118 Og Oganesson	13 Al Aluminum	53 I Iodine	85 At Astatine	79 Au Gold	45 Rh Rhodium	18 Ar Argon
78 Pt Platinum	41 Nb Niobium	7 N Nitrogen	48 Cd Cadmium	18 Ar Argon	106 Sg Seaborgium	43 TC Technetium	34 Se Selenium	44 Ru Ruthenium	86 Rn Radon

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В		N	G	0	В		N	G	0
112 Cn Copernicium	118 Og Oganesson	30 Zn Zinc	64 Gd Gadolinium	108 HS Hassium	62 Sm Samarium	17 Cl Chlorine	28 Ni Nickel	3 Li Lithium	14 Si Silicon
116 LV Livermorium	114 F L Flerovium	115 MC Moscovium	28 Ni Nickel	37 Rb Rubidium	92 U Uranium	115 MC Moscovium	49 In Indium	46 Pd Palladium	90 Th Thorium
66 Dy Dysprosium	91 Pa Protactinium		47 Ag Silver	8 O Oxygen	31 Ga Gallium	34 Se Selenium		13 Al Aluminum	66 Dy Dysprosium
87 Fr Francium	62 Sm Samarium	Fe Iron	23 V Vanadium	104 Rf Rutherfordium	97 Bk Berkelium	109 Mt Meitnerium	Pb Lead	70 Yb Ytterbium	104 Rf Rutherfordium
Ruthenium	31 Ga Gallium	74 W Tungsten	5 B Boron	101 Md Mendelevium	Neon	63 Eu Europium	88 Ra Radium	NO Nobelium	44 Ru Ruthenium

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В		N	G	0	В	I	N	G	0
27 Co Cobalt	MC Moscovium	90 Th Thorium	103 Lr Lawrencium	104 Rf Rutherfordium	70 Yb Ytterbium	79 Au Gold	87 Fr Francium	73 Ta Tantalum	81 T l Thallium
76 Os Osmium	14 Si Silicon	68 Er Erbium	17 Cl Chlorine	100 Fm Fermium	41 Nb Niobium	Xe Xenon	Sc Scandium	8 O Oxygen	37 Rb Rubidium
37 Rb Rubidium	88 Ra Radium		NO Nobelium	57 La Lanthanum	Na Sodium	12 Mg Magnesium		48 Cd Cadmium	24 Cr Chromium
114 F L Flerovium	9 F Fluorine	107 Bh Bohrium	108 HS Hassium	62 Sm Samarium	44 Ru Ruthenium	43 TC Technetium	78 Pt Platinum	67 Ho Holmium	65 Tb Terbium
96 Cm Curium	109 Mt Meitnerium	7 N Nitrogen	99 ES Einsteinium	59 Pr Praseodymium	14 Si Silicon	107 Bh Bohrium	86 Rn Radon	13 Al Aluminum	100 Fm Fermium

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В		N	G	0	В	I	N	G	0
40 Zr Zirconium	116 LV Livermorium	112 Cn Copernicium	57 La Lanthanum	98 Cf Californium	107 Bh Bohrium	49 In Indium	108 HS Hassium	40 Zr Zirconium	99 Es Einsteinium
24 Cr Chromium	35 Br Bromine	60 Nd Neodymium	Mg Magnesium	20 Ca Calcium	66 Dy Dysprosium	16 S Sulfur	57 La Lanthanum	72 Hf Hafnium	1 H Hydrogen
55 CS Cesium	64 Gd Gadolinium		18 Ar Argon	27 Co Cobalt	92 U Uranium	Pb Lead		14 Si Silicon	Na Sodium
65 Tb Terbium	7 N Nitrogen	93 Np Neptunium	71 Lu Lutetium	90 Th Thorium	96 Cm Curium	Sc Scandium	19 K Potassium	88 Ra Radium	62 Sm Samarium
66 Dy Dysprosium	Polonium	97 Bk Berkelium	6 C Carbon	32 Ge Germanium	30 Zn Zinc	89 AC Actinium	60 Nd Neodymium	6 C Carbon	104 Rf Rutherfordium

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В	I	N	G	0	В		N	G	0
71 Lu Lutetium	44 Ru Ruthenium	77 Ir Iridium	63 Eu Europium	72 Hf Hafnium	Neon	33 AS Arsenic	97 Bk Berkelium	113 Nh Nihonium	53 I Iodine
28 Ni Nickel	112 Cn Copernicium	53 I Iodine	Nobelium	113 Nh Nihonium	31 Ga Gallium	43 TC Technetium	86 Rn Radon	80 Hg Mercury	22 Ti Titanium
103 Lr Lawrencium	96 Cm Curium		97 Bk Berkelium	86 Rn Radon	36 Kr Krypton	68 Er Erbium		116 LV Livermorium	90 Th Thorium
56 Ba Barium	118 Og Oganesson	83 Bi Bismuth	50 Sn Tin	73 Ta Tantalum	27 Co Cobalt	25 Mn Manganese	108 HS Hassium	39 Y Yttrium	Rg Roentgenium
18 Ar Argon	55 CS Cesium	6 C Carbon	99 Es Einsteinium	90 Th Thorium	3 Li Lithium	40 Zr Zirconium	46 Pd Palladium	18 Ar Argon	2 He Helium

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В		N	G	0	В		N	G	0
38 Sr Strontium	69 Tm Thulium	46 Pd Palladium	19 K Potassium	50 Sn Tin	107 Bh	Ar	Ru	48 Cd	83 Bi
5 B Boron	73 Ta Tantalum	118 Og Oganesson	30 Zn Zinc	34 Se Selenium	Bohrium 12 Mg Magnesium	65 Tb Terbium	Ruthenium 67 HO Holmium	64 Gd Gadolinium	79 Au Gold
99 Es Einsteinium	55 CS Cesium		59 Pr Praseodymium	14 Si Silicon	9 F Fluorine	50 Sn Tin		6 C Carbon	40 Zr Zirconium
75 Re Rhenium	16 S Sulfur	1 H Hydrogen	67 Ho Holmium	104 Rf Rutherfordium	78 Pt Platinum	Neon	22 Ti Titanium	39 Y Yttrium	52 Te Tellurium
109 Mt Meitnerium	70 Yb Ytterbium	Bh Bohrium	7 N Nitrogen	79 Au Gold	99 ES Einsteinium	69 Tm Thulium	74 W Tungsten	Xe Xenon	Mendelevium

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В	I	N	G	0	В	I	N	G	0
1 H Hydrogen	18 Ar Argon	13 Al Aluminum	65 Tb Terbium	57 La Lanthanum	50 Sn Tin	34 Se Selenium	94 Pu Plutonium	39 Y Yttrium	67 Ho Holmium
102 No Nobelium	85 At Astatine	89 AC Actinium	74 W Tungsten	77 Ir Iridium	58 Ce Cerium	Fe Iron	97 Bk Berkelium	87 Fr Francium	5 B Boron
68 Er Erbium	7 N Nitrogen		Fe Iron	76 Os Osmium	114 Fl Flerovium	69 Tm Thulium		Polonium	112 Cn Copernicium
TS Tennessine	40 Zr Zirconium	98 Cf Californium	73 Ta Tantalum	72 Hf Hafnium	31 Ga Gallium	23 V Vanadium	12 Mg Magnesium	73 Ta Tantalum	98 Cf Californium
94 Pu Plutonium	33 AS Arsenic	47 Ag Silver	106 Sg Seaborgium	5 B Boron	96 Cm Curium	46 Pd Palladium	51 Sb Antimony	110 DS Darmstadtium	102 No Nobelium

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В		N	G	0	В		N	G	0
59 Pr Praseodymium	Promethium	30 Zn Zinc	34 Se Selenium	35 Br Bromine	76 OS Osmium	Mg Magnesium	32 Ge Germanium	Polonium	105 Db Dubnium
49 In Indium	53 Iodine	93 Np Neptunium	Mg Magnesium	99 Es Einsteinium	37 Rb Rubidium	48 Cd Cadmium	51 Sb Antimony	91 Pa Protactinium	16 S Sulfur
Na Sodium	69 Tm Thulium		87 Fr Francium	1 H Hydrogen	15 P Phosphorus	67 Ho Holmium		Pb Lead	5 B Boron
29 Cu Copper	NO Nobelium	25 Mn Manganese	52 Te Tellurium	114 F Flerovium	92 U Uranium	74 W Tungsten	44 Ru Ruthenium	18 Ar Argon	Xe Xenon
47 Ag Silver	65 Tb Terbium	89 AC Actinium	112 Cn Copernicium	4 Be Beryllium	59 Pr Praseodymium	69 Tm Thulium	96 Cm Curium	49 In Indium	6 C Carbon

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В		N	G	0	В		N	G	0
49 In Indium	15 P Phosphorus	64 Gd Gadolinium	22 Ti Titanium	NO Nobelium	34 Se Selenium	25 Mn Manganese	78 Pt Platinum	73 Ta Tantalum	36 Kr Krypton
81 T L Thallium	23 V Vanadium	Ne Neon	83 Bi Bismuth	72 Hf Hafnium	93 Np Neptunium	15 P Phosphorus	30 Zn Zinc	35 Br Bromine	97 Bk Berkelium
Rg Roentgenium	90 Th Thorium		97 Bk Berkelium	99 Es Einsteinium	110 DS Darmstadtium	59 Pr Praseodymium		98 Cf Californium	70 Yb Ytterbium
39 Y Yttrium	17 Cl Chlorine	42 MO Molibdenum	47 Ag Silver	68 Er Erbium	95 Am Americium	109 Mt Meitnerium	33 As Arsenic	101 Md Mendelevium	41 Nb Niobium
43 TC Technetium	98 Cf Californium	63 Eu Europium	28 Ni Nickel	8 O Oxygen	6 C Carbon	TS Tennessine	92 U Uranium	9 F Fluorine	22 Ti Titanium

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В		N	G	0	В		N	G	0
89 AC Actinium	99 Es Einsteinium	39 Y Yttrium	76 OS Osmium	15 P Phosphorus	86 Rn Radon	65 Tb Terbium	83 Bi Bismuth	115 MC Moscovium	32 Ge Germanium
116 LV Livermorium	NO Nobelium	78 Pt Platinum	Ne Neon	66 Dy Dysprosium	Pb Lead	112 Cn Copernicium	47 Ag Silver	41 Nb Niobium	49 In Indium
85 At Astatine	27 Co Cobalt		115 MC Moscovium	25 Mn Manganese	Pm Promethium	46 Pd Palladium		7 N Nitrogen	Mg Magnesium
97 Bk Berkelium	34 Se Selenium	Na Sodium	71 Lu Lutetium	92 U Uranium	87 Fr Francium	53 I Iodine	34 Se Selenium	Db Dubnium	5 B Boron
77 Ir Iridium	36 Kr Krypton	83 Bi Bismuth	61 Pm Promethium	4 Be Beryllium	116 LV Livermorium	40 Zr Zirconium	42 MO Molibdenum	90 Th Thorium	13 Al Aluminum

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	_					_			
Ni Nickel	Germanium	Protactinium	V Vanadium	Tc Technetium	Rh Rhodium	Co Cobalt	Au Gold	Europium	Re Rhenium
115 MC Moscovium	97 Bk Berkelium	75 Re Rhenium	108 HS Hassium	44 Ru Ruthenium	88 Ra Radium	Polonium	38 Sr Strontium	4 Be Beryllium	28 Ni Nickel
79 Au Gold	96 Cm Curium		3 Li Lithium	93 Np Neptunium	118 Og Oganesson	58 Ce Cerium		19 K Potassium	91 Pa Protactiniur
76 OS Osmium	105 Db Dubnium	20 Ca Calcium	30 Zn Zinc	80 Hg Mercury	85 At Astatine	AC Actinium	17 Cl Chlorine	22 Ti Titanium	65 Tb Terbium
87 Fr Francium	83 Bi Bismuth	9 F Fluorine	8 O Oxygen	22 Ti Titanium	98 Cf Californium	Xe Xe Xenon	108 HS Hassium	83 Bi Bismuth	60 Nd Neodymiur

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Periodic Table Fun Facts (Elements 1-118)

- 1. **Hydrogen** (H) The most abundant element in the universe, making up about 75% of its elemental mass.
- 2. **Helium (He)** Discovered in the Sun's spectrum before being found on Earth; it is the second lightest element.
- 3. **Lithium** (Li) The lightest metal and is used in rechargeable batteries for smartphones and electric cars.
- 4. **Beryllium** (Be) Used in aerospace materials for its lightweight and high-strength properties.
- 5. **Boron** (B) Essential for plant growth and used in borosilicate glass, which is resistant to thermal shock.
- 6. **Carbon** (C) Known as the "element of life" because it is the backbone of all organic compounds.
- 7. **Nitrogen** (N) Makes up 78% of Earth's atmosphere and is essential for proteins and DNA.
- 8. Oxygen (O) The most abundant element in the Earth's crust and essential for respiration in most living organisms.
- 9. **Fluorine** (**F**) The most reactive element and is used in toothpaste to prevent cavities.
- 10. **Neon (Ne)** Famous for its bright red-orange glow in neon signs.
- 11. **Sodium** (Na) Highly reactive and found in table salt (sodium chloride).
- 12. **Magnesium** (**Mg**) Used in fireworks for its bright white light and in lightweight alloys.
- 13. **Aluminum** (Al) A lightweight metal that resists corrosion and is used in aircraft and beverage cans.
- 14. **Silicon** (Si) The second most abundant element in Earth's crust; essential for computer chips.
- 15. **Phosphorus** (**P**) Used in matches and fertilizers; it can glow in the dark in certain forms.
- 16. **Sulfur** (S) Known for its yellow color and rotten egg smell when burned.
- 17. **Chlorine** (Cl) Used to disinfect water and in making PVC plastic.
- 18. **Argon** (**Ar**) Makes up about 1% of the Earth's atmosphere and is used in light bulbs to prevent the filament from oxidizing.
- 19. **Potassium** (**K**) Essential for nerve function and is found in bananas.
- 20. Calcium (Ca) Vital for bones and teeth; also used in cement and mortars.
- 21. **Scandium** (**Sc**) Used in aerospace components and sports equipment for its strength and lightness.
- 22. **Titanium** (**Ti**) Known for its high strength-to-weight ratio and corrosion resistance; used in medical implants.
- 23. **Vanadium** (**V**) Added to steel to increase strength and resistance to corrosion.
- 24. **Chromium** (**Cr**) Gives rubies their red color and is used to chrome-plate metals.
- 25. Manganese (Mn) Essential in steel production and found in many enzymes.
- 26. **Iron** (**Fe**) Central to hemoglobin in blood and a major component of steel.
- 27. Cobalt (Co) Used in batteries and gives glass a deep blue color.
- 28. Nickel (Ni) Magnetic at room temperature, which is why some countries' coins stick to magnets.
- 29. **Copper** (**Cu**) Excellent conductor of electricity; used in wiring and coins.
- 30. **Zinc** (**Zn**) Helps heal wounds, which is why zinc oxide is often used in skin creams.
- 31. Gallium (Ga) Can melt in your hand because it has a low melting point.
- 32. **Germanium** (**Ge**) Used in semiconductors and fiber optics.
- 33. **Arsenic** (As) Some bacteria can survive in environments with high levels of arsenic by incorporating it into their DNA instead of phosphorus.

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Periodic Table Fun Facts (Elements 1–118)

- 34. **Selenium** (**Se**) Essential in small amounts for human health; used in photocopiers.
- 35. **Bromine** (**Br**) A non-metal that is liquid at room temperature.
- 36. **Krypton** (**Kr**) Derives from the Greek 'kryptos', meaning 'hidden'; its compound krypton fluoride is used in some lasers.
- 37. **Rubidium** (**Rb**) Used in fireworks to produce purple hues.
- 38. **Strontium** (**Sr**) Makes fireworks red.
- 39. **Yttrium** (**Y**) Used in LEDs and superconductors.
- 40. **Zirconium** (**Zr**) Resistant to corrosion; used in nuclear reactors.
- 41. **Niobium** (**Nb**) Used in superconducting magnets.
- 42. **Molybdenum** (**Mo**) Essential trace element in the human diet; used in steel alloys.
- 43. **Technetium** (**Tc**) The first element to be artificially produced, in 1937.
- 44. **Ruthenium** (**Ru**) Used in electronics and as a catalyst.
- 45. **Rhodium** (**Rh**) Highly reflective and used in mirrors and jewelry.
- 46. **Palladium** (**Pd**) Used in catalytic converters and electronics.
- 47. **Silver** (**Ag**) The best conductor of electricity.
- 48. Cadmium (Cd) Used in batteries and pigments.
- 49. **Indium** (**In**) Used in touchscreens and LCDs.
- 50. **Tin** (**Sn**) Known for the "tin cry," a crackling sound it makes when bent.
- 51. **Antimony** (**Sb**) Used by the Ancient Egyptians in their eyeliner and mascara; in Medieval times, it was used medicinally as a laxative.
- 52. **Tellurium** (**Te**) Used in thermoelectric devices.
- 53. **Iodine** (I) Essential for thyroid function; used as a disinfectant.
- 54. **Xenon** (**Xe**) Used in flash lamps and ion propulsion systems.
- 55. **Cesium** (**Cs**) Used in atomic clocks.
- 56. **Barium** (**Ba**) Makes fireworks green.
- 57. Lanthanum (La) Used in camera lenses and studio lighting.
- 58. **Cerium** (Ce) Used in catalytic converters and glass polishing.
- 59. **Praseodymium** (**Pr**) Adds strength to aircraft engines when alloyed with magnesium.
- 60. **Neodymium** (Nd) Essential for powerful magnets in headphones and hard drives.
- 61. **Promethium** (**Pm**) A radioactive element used in luminous paint for watches.
- 62. **Samarium** (**Sm**) Used in magnets and nuclear reactors.
- 63. **Europium** (**Eu**) Provides the red color in TV and computer screens.
- 64. **Gadolinium** (**Gd**) Used in MRI contrast agents.
- 65. **Terbium** (**Tb**) Used in green phosphors for color TV tubes.

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Periodic Table Fun Facts (Elements 1–118)

- 66. **Dysprosium** (**Dy**) Enhances strength of magnets at high temperatures.
- 67. **Holmium** (**Ho**) Has the highest magnetic strength of any element.
- 68. **Erbium** (**Er**) Used in fiber-optic communication systems.
- 69. **Thulium** (**Tm**) Used in portable X-ray machines.
- 70. **Ytterbium** (**Yb**) Used in improving the grain refinement of stainless steel.
- 71. **Lutetium** (**Lu**) Used in PET scan detectors.
- 72. **Hafnium** (**Hf**) Used in control rods for nuclear reactors.
- 72. **Tantalum** (**Ta**) Highly corrosion-resistant; used in surgical implants.
- 73. **Tungsten** (**W**) Has the highest melting point of all metals.
- 74. **Rhenium** (**Re**) Used in jet engine components.
- 75. **Osmium** (**Os**) Densest naturally occurring element.
- 76. **Iridium** (**Ir**) Highly corrosion-resistant; used in spark plugs.
- 77. **Platinum** (**Pt**) Used as a catalyst in chemical reactions.
- 78. **Gold** (**Au**) Extremely malleable and ductile.
- 79. **Mercury** (**Hg**) Only metal that's liquid at room temperature.
- 80. **Thallium** (**Tl**) Used in low-temperature thermometers.
- 81. **Lead (Pb)** Historically used in pipes and paints.
- 82. **Bismuth** (**Bi**) Has low toxicity; used in cosmetics and medicines.
- 83. **Polonium** (**Po**) Highly radioactive; discovered by Marie Curie.
- 84. **Astatine** (At) Rarest naturally occurring element on Earth.
- 85. **Radon** (**Rn**) Radioactive gas that can accumulate in homes.
- 87. **Francium** (**Fr**) Extremely rare and highly radioactive.
- 88. **Radium** (**Ra**) Used in luminous paints; discovered by the Curies.
- 89. **Actinium** (**Ac**) Glows in the dark due to its radioactivity.
- 90. **Thorium** (**Th**) Potential fuel for nuclear reactors.
- 91. **Protactinium (Pa)** Used in scientific research.
- 92. **Uranium** (U) Primary fuel for nuclear power plants.
- 93. **Neptunium** (**Np**) First transuranic element discovered.
- 94. **Plutonium** (**Pu**) Used in nuclear weapons and reactors.
- 95. Americium (Am) Used in smoke detectors.
- 96. Curium (Cm) Named after Marie and Pierre Curie.
- 97. **Berkelium** (**Bk**) Named after Berkeley, California.

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Periodic Table Fun Facts (Elements 1–118)

- 98. Californium (Cf) Used to start nuclear reactors.
- 99. Einsteinium (Es) Named after Albert Einstein.
- 100. **Fermium** (**Fm**) Discovered in the debris of the first hydrogen bomb test.
- 101. **Mendelevium** (**Md**) Named after Dmitri Mendeleev.
- 102. **Nobelium (No)** Named in honor of Alfred Nobel.
- 103. **Lawrencium** (**Lr**) Named after Ernest O. Lawrence.
- 104. **Rutherfordium (Rf)** Named after Ernest Rutherford.
- 105. **Dubnium** (**Db**) Named after Dubna, Russia.
- 106. **Seaborgium** (**Sg**) Named after Glenn T. Seaborg.
- 107. **Bohrium** (**Bh**) Named after Niels Bohr.
- 108. **Hassium** (**Hs**) Named after the German state of Hesse.
- 109. **Meitnerium (Mt)** Named after Lise Meitner.
- 110. **Darmstadtium (Ds)** Named after Darmstadt, Germany.
- 111. **Roentgenium** (**Rg**) Named after Wilhelm Röntgen.
- 112. **Copernicium** (**Cn**) Named after Nicolaus Copernicus.
- 113. **Nihonium** (**Nh**) First element discovered in Asia; named after Japan.
- 114. **Flerovium (Fl)** Named after the Flerov Laboratory in Russia.
- 115. **Moscovium (Mc)** Named after Moscow Oblast, Russia.
- 116. **Livermorium** (Lv) Named after Livermore, California.
- 117. **Tennessine** (**Ts**) Named after Tennessee, USA.
- 118. **Oganesson** (**Og**) Named in honor of Yuri Oganessian; it's a noble gas that may behave like a metal.

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Periodic Table Bingo

How to Play Periodic Table Bingo Game

- Prepare the equipment by cutting out the calling pieces and playing cards.
- Hand out one playing card along with some items to use as markers if wanting to reuse the cards: coloured paper, dried beans, small stones, etc.
- Place the calling tiles into a container (hat, jar, basket) and shake/mix to randomize your calls.
- Pull one tile from your container and announce the element you collected and mark the call sheet to keep track of the elements you call.
- Repeat until a player has marked five elements in a row, column, or diagonal on their card and calls out Bingo.
 Check their card from the markers on your call sheet.
- Game by Todd Helmenstine and adapted by Bernard Taylor
- Tell students to write their names and the date at the top of the bingo sheet.
- Tell students they have to listen carefully to the element being called out and to mark it on their bingo sheet.
- Once they have created one horizontal line/or all of the elements on their sheet they must shout out Bingo.
- Ask students to pick an element out of a hat/bucket.
- Teacher to read out the fun fact, about each element, for students to learn whilst having fun.

Enjoy

1	2	3	4 Be Beryllium	5
H	He	Li		B
Hydrogen	Helium	Lithium		Boron
6	7	8	9	10
C	N	O	F	Ne
Carbon	Nitrogen	Oxygen	Fluorine	Neon
Na Sodium	Mg Magnesium	13 Al Aluminum	14 Si Silicon	15 P Phosphorus
16	17	18 Ar Argon	19	20
S	Cl		K	Ca
Sulfur	Chlorine		Potassium	Calcium
21	22	23	24	25
SC	Ti	V	Cr	Mn
Scandium	Titanium	Vanadium	Chromium	Manganese
26	27	28	29	30
Fe	Co	Ni	Cu	Zn
Iron	Cobalt	Nickel	Copper	Zinc

31 32 33 34 35 Se Br Ge Ga As Gallium Selenium Germanium **Arsenic Bromine** 36 37 38 39 40 Zr Kr Rb Sr Krypton Rubidium Strontium Yttrium Zirconium 43 44 41 42 45 Nb Tc Rh Ru Mo Molibdenum **Technetium Niobium** Ruthenium Rhodium 46 47 48 49 50 Cd Pd Sn **Palladium** Silver Cadmium Indium Tin 51 52 53 54 55 Sb Te Cs Xe **Antimony Tellurium Iodine** Xenon Cesium 56 57 58 59 60 Nd Ba Ce Pr Lanthanum Cerium Praseodymium Neodymium **Barium**

Promethium	62	63	64	65
	Sm	Eu	Gd	Tb
	Samarium	Europium	Gadolinium	Terbium
Dy Dysprosium	67	68	69	70
	Ho	Er	Tm	Yb
	Holmium	Erbium	Thulium	Ytterbium
71	72	73	74	75
Lu	Hf	Ta	W	Re
Lutetium	Hafnium	Tantalum	Tungsten	Rhenium
76	77	78	79	80
OS	Ir	Pt	Au	Hg
Osmium	Iridium	Platinum	Gold	Mercury
81 T l Thallium	Pb Lead	83 Bi Bismuth	Polonium	85 At Astatine
86	87	88	89	90
Rn	Fr	Ra	AC	Th
Radon	Francium	Radium	Actinium	Thorium

91 92 93 94 95 Np Pa Pu Am Neptunium Protactinium Plutonium **Americium Uranium** 96 97 98 99 100 Cm Bk Cf Fm Es Berkelium Curium Californium Einsteinium **Fermium** 101 102 103 104 105 Md No Rf Db Mendelevium Rutherfordium Nobelium Lawrencium **Dubnium** 106 107 108 109 110 Bh Hs Mt Ds Seaborgium **Bohrium** Hassium Meitnerium Darmstadtium 112 113 114 111 115 Cn Nh Fl Mc Roentgenium Copernicium Nihonium Flerovium Moscovium 116 117 118 Γs **Tennessine** Livermorium Oganesson

1 H Hydrogen	Periodic Table of the Elements												2 He Helium				
3 Li	4 Be Beryllium											5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	Ne Neon
11 Na Sodium	Mg Magnesium											13 Al Aluminum	14 Si Silicon	Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
19 K Potassium	20 Ca	SC Scandium	Ti Titanium	Vanadium	Cr Chromium	Mn Manganese	Fe Iron	CO Cobalt	28 Ni _{Nickel}	Cu Copper	Zn Zinc	Gallium	Germanium	AS Arsenic	Se Selenium	35 Br Bromine	36 Kr Krypton
Rb Rubidium	38 Sr Strontium	39 Y Yttrium	40 Zr	41 Nb Niobium	MO Molibdenum	TC Technetium	Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In	Sn Tin	51 Sb Antimony	Te	53	Xe Xe
CS Cesium	56 Ba Barium	57-71 Lanthanides	72 Hf	73 Ta	74 W Tungsten	75 Re	76 Os Osmium	77 Ir	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Tl Thallium	Pb Lead	83 Bi Bismuth	PO Polonium	85 At Astatine	Rn Radon
87 Fr Francium	Ra Radium	89-103 Actinides	104 Rf Rutherfordium	Db Dubnium	106 Sg Seaborgium	107 Bh Bohrium	108 HS Hassium	109 Mt Meitnerium	DS Darmstadtium	Rg Roentgenium	112 Cn Copernicium	Nh Nihonium	Flerovium	MC Moscovium	116 LV Livermorium	TS Tennessine	Og Oganesson

57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
La Lanthanum	Ce Cerium	Pr Praseodymium	Neodymium	Pm Promethium	Sm Samarium	Eu Europium	Gd Gadolinium	Tb Terbium	Dy Dysprosium	Ho Holmium	Er Erbium	Tm Thulium	Yb Ytterbium	Lu Lutetium
89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
Ac Actinium	Th Thorium	Pa Protactinium	U Uranium	Np Neptunium	Pu	Am Americium	Cm	Bk Berkelium	Cf Californium	Es	Fm Fermium	Md Mendelevium	No Nobelium	Lr Lawrencium

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